IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Grubb	
Application Serial No. 10/602,945	FERRITIC STAINLESS STEEL HAVING HIGH TEMPERATURE CREEP RESISTANCE
Filing Date: June 24, 2003	
Art Unit 1795	
Examiner Tracy Mae Dove	
Confirmation No. 1816	Docket No. RL-1627DIV

REPLY BRIEF UNDER 37 C.F.R. § 41.41

November 30, 2009

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant submits this Reply Brief under 37 C.F.R. § 41.41 in response to the Examiner's Answer mailed on October 1, 2009 in connection with the pending appeal in the above-identified patent application (the "Subject Application"). Appellant respectfully requests entry and consideration of this Reply Brief.

I. STATUS OF CLAIMS

Claims 36-40, 42, and 43 are pending in the Subject Application. The Subject Application is a divisional application of United States Patent Application Serial No. 09/998,487, filed on November 30, 2001, which issued as United States Patent No. 6,641,780 on November 4, 2003.

The Subject Application was originally filed with claims 1-39. Claims 1-22 were canceled without prejudice or disclaimer in a Preliminary Amendment filed on June 24, 2003. Claims 40-54 were added in a Supplemental Preliminary Amendment filed on September 18, 2003. Claim 41 was canceled without prejudice or disclaimer in a Response to Office Action filed on June 21, 2005. Claims 23-35 and 44-54 were canceled without prejudice or disclaimer in a Response to Office Action filed on November 22, 2006.

Claims 36-40, 42, and 43 were under examination on the merits and form the basis of this Appeal. Claim 36 is the only independent claim.

II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether the Examiner has established a *prima facie* case that claims 36-40, 42, and 43 are unpatentable under 35 U.S.C. § 103(a) as having been obvious over Simpkins in view of Taruya, as evidenced by Woods.

2. If the Examiner did establish a *prima facie* case, whether the record evidence of unexpected results nevertheless rebuts the *prima facie* case.

III. ARGUMENTS

In a Final Office Action mailed on June 5, 2008, pending claims 36-40, 42, and 43 were rejected by the Examiner under 35 U.S.C. § 103(a) as allegedly having been obvious over United States Patent No. 6,613,468 to Simpkins et al. ("Simpkins") in view of Japanese Patent Application Publication No. 2000-294256 to Tarutani et al. (referred to throughout the prosecution of the Subject Application as "Taruya"), as evidenced by United States Patent No. 5,424,144 to Woods et al. ("Woods").

In response to the Final Office Action, Appellant filed a Notice of Appeal and a Pre-Appeal Brief Request for Review on December 5, 2008. The Conference Panel issued a Notice of Panel Decision from Pre-Appeal Brief Review on December 23, 2008 indicating that the Subject Application remains under appeal because issues remain for consideration by the Board.

Appellant filed an Appeal Brief under 37 C.F.R § 41.37 on July 6, 2009 discussing the pending rejection of claims 36-40, 42, and 43 under 35 U.S.C. § 103(a) and demonstrating why these claims would not have been obvious in view of Simpkins, Taruya, and Woods. On October 1, 2009, an Examiner's Answer was issued in response to the Appeal Brief. Appellant submits that the Examiner's Answer contains a number of assertions that are factually incorrect, legally incorrect, or both. Appellant addresses these incorrect assertions herein. All references herein to the Specification of the Subject Application refer to the page and line numbers of the Specification as originally filed, not as published.

A. The compositional relationship for titanium and niobium recited in claim 36 is not taught or suggested by the cited references

The Examiner acknowledges that Simpkins and Woods do not teach or suggest a ferritic stainless steel having the features recited in 36. On page 7 of the Examiner's Answer, the Examiner asserts that Taruya teaches a total combined weight

percentage of titanium (Ti), niobium (Nb), and tantalum (Ta) of 0.5%. Therefore, the Examiner asserts that Taruya would have suggested the compositional relationship recited in claim 36, which provides (in weight percentage):

$$0.5 \leq (\%Nb + \%Ti + \tfrac{1}{2}(\%Ta)) \leq 1$$

Appellant respectfully disagrees.

In the Evidence Appendix of the Appeal Brief filed on July 6, 2009, Appellant submitted a certified and notarized English language translation of the official Japanese language version of Japanese Patent Application Publication No. 2000-294256 ("Taruya"). Appellant also submitted a certified and notarized corrected translation of paragraphs [0005] and [0006] of Taruya.[1] The certified and notarized translation of Taruya contradicts the Examiner's assertions.

Specifically, Taruya teaches that "Ti is less than 0.2%" and that "Nb is less than 0.3%" by weight. See claim 4 and paragraphs [0025], [0047], and [0049] in Taruya, reproduced below for convenience, emphasis added by Appellant.

> **[Claim 4] A solid polymer-type fuel cell as in any of the Claims 1 thru 3 for which the ferrite stainless steel contains one or two types of Ti and Nb, Ti is less than 0.2% by weight percent and within a range of 6 (C% + N%)~25 (C% + N%), and Nb is less than 0.3% and within a range of 6C%~25C%.**

> **[0025] (4) A solid polymer-type fuel cell as in any of the above entries 1 thru 3 for which the ferrite stainless steel contains one or two types of Ti and Nb, Ti is less than 0.2% by weight percent and within a range of 6(C%+N%)~25(C%+N%), and Nb is less than 0.3% and within a range of 6C%~25C%.**

[1] Unless otherwise indicated, all references to Taruya in this Reply Brief are to the certified and notarized translation submitted in the Evidence Appendix of the Appeal Brief filed on July 6, 2009.

> **[0047] Ti: Ti is less than 0.2% as needed, and is included by a range amount greater than six times and less than 25 times the value of (C%+N%). Ti leads to poisons in the anode and cathode catalytic layer, so it is intrinsically an element that must be reduced, but, from the viewpoint of insuring manufacturability during mass production and workability of the plating, the minimum amount is included according to need.**
>
> . .
>
> **[0049] Nb: Nb is an element that is included as needed, and is also an alloying element for which the bonding strength with intra steel C and N is stronger than Cr, the same as Ti. Nb is less than 0.3%, and is included within a range of C% x 6~C% x 25 [specifically, Nb (%) / C (%) = 6~25%]. It is quite effective in improving tenacity, including normal temperature tenacity of hot-rolled coils. However, Nb eluted along with corrosion accumulates as a corrosion product on the corrosion face, and has the harmful effect of raising contact electrical resistance, so it is more desirable if the Nb content is low from the viewpoint of base material performance. However, the required minimum amount is added in the cases of insuring weld performance, or determining the necessity of improving the workability of cold-rolled steel sheet material by simultaneously including Nb and Ti.**

Thus, Taruya teaches limiting Ti to less than 0.2% and Nb to less than 0.3%. Taruya presents no teachings regarding Ta. It directly follows that Taruya suggests limiting the combined content of Ti and Nb to less than 0.5%, contrary to the Examiner's assertion. Therefore, Taruya does not teach or suggest the compositional relationship recited in claim 36.

Indeed, Taruya teaches away from the compositional relationship recited in claim 36 because Taruya teaches that Ti is "an element that must be reduced", and that it "is more desirable if the Nb content is low". Thus, Ti and Nb are elements in which only "the minimum amount is included according to need." Therefore, a person skilled in the art would have no reason to investigate amounts within the compositional relationship recited in claim 36.

Furthermore, as discussed in the Specification of the Subject Application, and in Appellant's Appeal Brief, the inventor in the Subject Application found that the compositional relationship recited in claim 36 improved creep resistance in ferritic stainless steels. Specification, p.14, l.13 to p.15, l.8. Taruya does not even mention creep resistance, let alone recognize or suggest the unexpected and significant improvement in creep resistance that is achieved with the compositional relationship recited in claim 36. See Section E, *infra*. Therefore, a person skilled in the art would have no basis upon which to determine the compositional relationship recited in claim 36 from the teachings in Taruya.

B. Obviousness and inherency are distinct legal concepts

On page 4 of the Examiner's Answer, the Examiner asserts that the creep properties recited in claim 36 would have been inherent in the teachings of Taruya absent any proof to the contrary. Appellant respectfully disagrees.

As set forth in MPEP § 2141.02(V), obviousness cannot be based on what is not known at the time an invention is made, even if the inherency of a certain feature is later established. In other words, an obviousness rejection cannot be based on a theory of inherency. Rather, in order to rely on some allegedly inherent feature of the prior art when establishing an obviousness rejection, the allegedly inherent feature must have been taught or suggested in the prior art at the time that the claimed invention was made. In re Rijckaert, 9 F.3d 1531 [28 USPQ2d 1955] (Fed. Cir. 1993).

In the case In re Rijckaert, the Examiner based an obviousness rejection on a combination of prior art references that failed to teach or suggest certain features recited in the rejected claims. Id. The Examiner argued that these features would have been inherent in the combined disclosures of the prior art and that a person skilled in the art would understand the features to be inherent. Id. The Court of Appeals for the Federal Circuit reversed the

Examiner's legal conclusion of obviousness, stating that, as a matter of law, "a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection." Id. The Court held that obviousness cannot be shown based on what is not known in the prior art at the time an invention is made, even if the inherency of a certain feature is later established. Id.; *see* also MPEP § 2141.02.V.

Thus, the law governing obviousness under 35 U.S.C. § 103(a) requires that allegedly inherent features be taught or suggested in the prior art in order to support a case of *prima facie* obviousness. This well-settled principle of law is supported by a number of cases. See, e.g., In re Spormann, 363 F.2d 444, 448 [150 USPQ 449, 452] (CCPA 1966) ("...the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown."); W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1555 [220 USPQ 303, 314] (Fed. Cir. 1983) ("Inherency and obviousness are distinct concepts."); Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1576 [230 USPQ 81, 88] (Fed. Cir. 1986) (an inherent feature may be relied upon to establish obviousness only if the inherency would have been obvious to a person skilled in the art); Cohesive Technologies Inc. v. Waters Corp., 543 F.3d 1351 [88 USPQ2d 1903] (Fed. Cir. 2008) ("... although anticipation can be proven inherently, proof of inherent anticipation is not the same as proof of obviousness.").

Indeed, this principle of law is so well-settled that it is stated in a preeminent treatise on United States patent law. See 2 Donald S. Chisum, Chisum on Patents § 5.03[3][a][i][A] (Matthew Bender) (a single prior art reference may anticipate because of the inherent disclosure of the reference, but inherent disclosure may only be used to support obviousness if the inherent subject matter itself would have been obvious, *i.e.*, taught or suggested in the prior art).

In addition, in the case of In re Newel, 891 F.2d 899 [13 USPQ2d 1248] (Fed. Cir. 1989), the Examiner also based an obviousness rejection on a combination of prior art references that failed to teach or suggest certain features recited in the rejected claims, arguing that the missing subject matter would have been inherent in the prior art. Again, the Court of Appeals for the Federal Circuit reversed the Examiner's legal conclusion of obviousness, holding that, as a matter of law, the Examiner cannot use an unsupported inherency argument as an end-run around the requirement for a teaching or suggestion of the asserted inherent feature in the prior art. Id. The Court held that additional extrinsic prior art evidence is required to support an asserted inherency argument in an obviousness rejection. Id.

Thus, the case law holds that obviousness rejections based on asserted "inherent" properties in the art cannot be sustained when there is no teaching or suggestion in the prior art to support the assertedly inherent subject matter. In re Spormann, *supra*; In re Rijckaert, *supra*. When the Examiner asserts that there is an inherent feature in the prior art, the Examiner must produce supporting references that factually teach or suggest the allegedly inherent subject matter. In re Newell, *supra*.

In the present case, the Examiner has failed to cite to any references or other evidence that teaches or suggests that the compositional features described in Taruya would inherently result in the properties recited in claim 36. Therefore, the cited references cannot serve as the basis for a *prima facie* case under 35 U.S.C. § 103(a).

Moreover, to establish inherency, the extrinsic evidence (*i.e.*, the cited references) must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be recognized as such by a person skilled in the art. In re Robertson, 169 F.3d 743, 745 [49 USPQ2d 1949, 1950-51] (Fed. Cir. 1999); MPEP § 2112.IV. Inherency

may not be established by probabilities or possibilities; inherency requires factual evidence of an alleged inherent feature. Id. In this regard, MPEP § 2112.IV provides that:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

Accordingly, in order for the creep properties recited in claim 36 to have been inherent, as asserted by the Examiner, these properties must necessarily exist in the subject matter described in Taruya. However, the inventor in the Subject Application showed that the creep properties recited in claim 36 are due, at least in part, to the compositional relationship recited in claim 36, which is not taught or suggested in Taruya. Indeed, Taruya teaches away from Ti and Nb levels that satisfy the compositional relationship recited in claim 36. Therefore, the Examiner's unsupported assertion that the recited creep properties would have been inherent is a conclusory statement that cannot form the basis of a *prima facie* case under 35 U.S.C. § 103(a).

C. The alleged overlap of the ranges recited in claim 36 and the ranges disclosed in Taruya is not determinative

On page 4 of the Examiner's Answer, the Examiner asserts that a *prima facie* case of obviousness has been established because of the alleged overlap of the ranges recited in claim 36 and the ranges disclosed in Taruya, relying on Titanium Metals Corp. of America v. Banner, 778 F.2d 775 [227 USPQ 773] (Fed. Cir. 1985). However, the Titanium Metals case is factually distinguishable from this case.

In Titanium Metals, a claimed titanium alloy including 0.8% Ni and 0.3% Mo was held to have been obvious in view of two (2) prior art titanium alloys, one having 0.75% Ni and 0.25% Mo, and the other having 0.94% Ni and 0.31% Mo. 227 USPQ at 775. The Court stated that "[t]he proportions are so close that *prima facie* one skilled in

the art would have expected them to have the same properties." The Court then stated that the applicant produced no evidence to rebut the *prima facie* case and held the claimed alloy to have been obvious.

In contrast, this case presents the following relevant alloy constituents:

Element	Taruya	Claim 36
Cr	10.5-35	> 25
Mo	0-6	0.75-1.5
C	< 0.018	≤ 0.05
Nb	< 0.3	0.5 ≤ (%Nb + %Ti + ½(%Ta)) ≤ 1
Ti	< 0.2	0.5 ≤ (%Nb + %Ti + ½(%Ta)) ≤ 1
Ta	0	0.5 ≤ (%Nb + %Ti + ½(%Ta)) ≤ 1

As discussed above, the Ti and Nb content taught in Taruya does not overlap and Taruya teaches away from Ti and Nb content that would satisfy the compositional relationship recited in claim 36. Therefore, the Examiner has not established a *prima facie* case.

Regarding molybdenum, the Examiner merely states that "the claimed range of Molybdenum (Mo) is encompassed by the range disclosed by Taruya." However, the Examiner fails to address Appellant's arguments presented in the Appeal Brief regarding the breadth of the Mo range disclosed in Taruya.

Briefly, the inventor in the Subject Application discovered that careful control of Mo content to 0.75-1.5 weight percent provides a particularly suitable balance between the conflicting materials properties exhibited by Mo-containing ferritic stainless steels. As stated in the Specification:

> Molybdenum reduces thermal expansion. It also provides solid solution strengthening and in conjunction with niobium forms the strengthening Laves phase $Fe_2(Nb,Mo)$ precipitate. Molybdenum, however, substantially increases the tendency of the stainless steel to precipitate the undesirable sigma phase, as well as the equally undesirable chi (Fe,Cr,Mo) phase. Molybdenum also impairs the oxidation resistance of the steel and can, under certain circumstances, promote a catastrophic form of oxidation. For these reasons, the molybdenum content of the stainless steel preferably is carefully controlled. A molybdenum content of about 0.75 up to about 1.5 weight percent, and more preferably

> up to about 1.2 weight percent, provides a particularly suitable balance between the desirable and undesirable influences of the element on the alloy's properties. In particular, experimental alloys produced by the inventor including 0.9 to 1.1 weight percent molybdenum exhibited a particularly desirable balance of properties.

In contrast, Taruya discloses a very broad 0-6 percent range of Mo. Taruya does not provide any teachings that would suggest limiting Mo to 0.75-1.5 weight percent to achieve a coefficient of thermal expansion within about 25 percent of the coefficient of thermal expansion of stabilized zirconia, as recited in claim 36.

Thus, in contrast to the case presented in Titanium Metals, here the proportions are not so close that a person skilled in the art would have expected the alloy recited in claim 36 and the alloy described in Taruya to have the same properties. Indeed, the inventor in the Subject Application has shown that the compositional features recited in claim 36 produce unexpected results in terms of coefficient of thermal expansion properties and creep resistance properties. See Section E, *infra*. Therefore, the Examiner has not established a *prima facie* case under 35 U.S.C. § 103(a).

D. Simpkins, Taruya, and Woods collectively fail to teach or suggest the solid oxide fuel cell recited in claim 36

On page 5 of the Examiner's Answer, the Examiner disagrees with Appellant's argument that there are very significant differences and substantial distinctions between the solid oxide fuel cell (SOFC) recited in claim 36 and the subject matter disclosed in Simpkins, Taruya, and Woods. But the Examiner's disagreement is based on a selective and incomplete interpretation of the cited references.

Prior art references must be considered in their entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. MPEP § 2141.02(VI). All of the words and features recited in the claims must be considered in judging the patentability of the claim against the prior art. MPEP § 2143.03. Thus, a determination regarding the obviousness or non-obviousness of the claims in a patent

application involves a direct comparison of the subject matter of the claims, as a whole, to the teachings of the cited references, as a whole.

The Examiner asserts that a person skilled in the art would have known that an interconnect for a solid polymer type of fuel cell (as taught in Taruya) could be used as an interconnect for a solid oxide type of fuel cell (as taught in Simpkins) based on the teachings presented in Woods. Woods is directed to the structural design of fuel cell separator plates. The Examiner apparently contends that Woods provides evidence of the interchangeability of interconnects among different types of fuel cells based on the following portion of the reference:

1

ONE PIECE SEPARATOR PLATE WITH INSERT RING STEP DESIGN

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a separator plate suitable for use in various known types of fuel cells, such as molten carbonate fuel cells, solid oxide fuel cells, polymer electrolyte fuel cells, and phosphoric acid fuel cells. More particularly, this invention relates to a separator plate suitable for use in internally manifolded fuel cell stacks.

This passage may indicate that the separator plate design described in Woods can be used interchangeably among different types of fuel cells, but Woods does not consider the constituent material of the disclosed separator plate apart from an indication that it may be a ferrous material. However, Taruya does consider the technological issues involving the constituent materials of interconnects.

Taruya discloses the general types of fuel cells in paragraphs [0002] and [0003] as including solid electrolyte fuel cells (*i.e.*, SOFCs), fused carbonate fuel cells, phosphoric acid fuel cells, and solid polymer fuel cells. Taruya describes various technological issues involving the constituent materials of fuel cells, including interconnects, in paragraph [0005], reproduced below for convenience.

[0005]: Although the aforementioned various types of fuel cells are referred to by the common name of "fuel cell", when taking into account the constituent materials of each cell, they need to be regarded as completely different things. This is because the presence of corrosion of constituent materials due to the electrolyte used, the presence of high temperature oxidation which begins to actualize from around 380°C, the sublimation and redeposition of electrolyte, and the performance demanded by the presence of coagulation, etc., particularly anti-corrosion resistance, is completely different for each fuel cell. In actuality, the materials used are various, ranging from graphite materials, to Ni-clad material, high alloys, and stainless steel.

The Examiner asserts that the disclosure in paragraph [0005] in Taruya relates to interchanging the electrolyte, fuel electrode, and/or oxide electrode materials of different fuel cell types. But the Examiner asserts that paragraph [0005] does not relate to interconnect materials. Examiner's Answer, p.5, ll.12-14. However, there is no language in paragraph [0005] that excludes interconnects as asserted by the Examiner. Paragraph [0005] discusses the constituent materials of fuel cells in general terms. Fuel cells include electrodes, electrolytes, **and interconnects**. Therefore, paragraph [0005] discusses the constituent materials of electrodes, electrolytes, **and interconnects**, contrary to the Examiner's assertion.

Paragraph [0005] states that each type of fuel cell must be regarded as completely different when taking into account the constituent materials of the various types of fuel cells (including the constituent materials of interconnects). Taruya goes on to explain that it is "completely unthinkable" to use materials (including interconnect materials) from relatively high temperature phosphoric acid and molten carbonate fuel cells (typically operating at about 200°C and 650°C, respectively) in polymer electrolyte fuel cells (typically operating at about 80°C). Taruya, para. [0003] and [0006]. It directly follows that it would have been equally unthinkable to use materials from solid polymer type fuel cells (such as the steel described in Taruya) in SOFCs, which according to Taruya typically operate at about 1000°C. Taruya, para. [0003].

Thus, a person skilled in the art, after considering Taruya, would not have been motivated to use any of the constituent materials from the polymer-type fuel cell described in Taruya in another type of fuel cell, especially one operating at a much higher temperature, such as a SOFC. Indeed, Taruya teaches away from the

interchangeability of the constituent materials of the various types of fuel cells. Woods does not change the teachings in Taruya.

Further, to the extent that Simpkins discloses that interconnects can comprise "ferrous material" (c.6, l.53), this represents evidence of the unsettled nature of the technological issues involving the constituent materials forming interconnects for fuel cells. Thus, the cited references provide evidence of a lack of an accepted understanding in the art, before the Subject Application, regarding the constituent materials of the various types of fuel cell interconnects. Obviousness cannot be based on conflicting evidence and, therefore, the cited references do not support a *prima facie* case under 35 U.S.C. § 103(a).

The cited references indicate that the operating conditions of the different types of fuel cells are so drastically different that one skilled in the art would have understood that constituent materials are not generally interchangeable between fuel cell types. Thus, the Examiner's rejection is based on a selective and incomplete application of the cited references. The Examiner cites only those portions of Simpkins, Taruya, and Woods that she can use to re-construct the claims of the Subject Application, while ignoring the contradictory portions of the cited references. It is improper to selectively ignore significant portions of the disclosure of the cited references, which contravenes the requirement that the prior art be considered in its entirety for all that it reasonably teaches and suggests.

E. The examiner improperly disregarded the evidence of unexpected results

On page 7 of the Examiner's Answer, the Examiner disregards the evidence of unexpected results originally provided in the Specification. The Examiner states that "unexpected results must distinguish the claimed invention over the prior art of record." The Examiner apparently contends that evidence of unexpected results must consist of direct comparisons with the compositions described in Taruya. The

Examiner cites no support for this position, but apparently the Examiner is referring to MPEP § 716.02(e), which states that "[a]n affidavit or declaration under 37 C.F.R. § 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a *prima facie* case of obviousness." (Case citations omitted). However, the evidence of unexpected results is not in the form of an affidavit or declaration, but rather the evidence is presented in the Specification. Rebuttal evidence and arguments can be presented in the specification. MPEP § 2145 (citing, In re Soni, 54 F.3d 746, 750 [34 USPQ2d 1684, 1687] (Fed. Cir. 1995)).

Appellant submits that substantial evidence exists in the Specification showing that a ferritic stainless steel including Ti, Nb, and/or Ta satisfying:

$$0.5 \leq (\%Nb + \%Ti + \tfrac{1}{2}(\%Ta)) \leq 1$$

exhibits unexpected and significant creep resistance properties relative to conventional E-BRITE® ferritic stainless steel. See Specification, p.28-39.

The nominal composition of E-BRITE® ferritic stainless steel is presented in the Specification on page 42, lines 16-21. A comparison among the nominal composition of E-BRITE® ferritic stainless steel, the composition recited in claim 36, and the ferritic stainless steel described in Taruya reveals that, between E-BRITE® ferritic stainless steel and the ferritic stainless steel described in Taruya, E-BRITE® ferritic stainless steel is compositionally closer to the ferritic stainless steel recited in claim 36. Therefore, the ferritic stainless steel recited in claim 36 does indeed exhibit unexpected and significant creep resistance properties relative to the ferritic stainless steel described in Taruya because the unexpected and significant properties have been shown relative to the more comparable E-BRITE® ferritic stainless steel.

Thus, contrary to the Examiner's assertion, the evidence indicates that the ferritic stainless steel described in Taruya does indeed have significantly different properties than the ferritic stainless steel recited in claim 36. This is exemplified by the fact that Taruya teaches away from Ti and Nb content that satisfies the compositional

relationship recited in claim 36. In fact, Taruya does not even mention creep resistance properties in any capacity, let alone suggest the unexpected and significant improvement in creep resistance that is achieved with the compositional relationship recited in claim 36.

"Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a *prima facie* case of obviousness." MPEP § 716.02(a) (citing In re Chupp, 816 F.2d 643, 643 [2 USPQ2d 1437, 1439] (Fed. Cir. 1987)). "Presence of a property not possessed by the prior art is evidence of nonobviousness." Id. (citing In re Papesch, 315 F.2d 381 [137 USPQ 43] (CCPA 1963)). Further, "[e]vidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims." MPEP § 716.02(b) (case law citations omitted). See also, MPEP § 2145.

Accordingly, substantial evidence of unexpected and significant creep resistance properties exists in the record and is entitled to consideration. It was a legal error for the Examiner to disregard the evidence of unexpected results in the record of the Subject Application. Appellant respectfully submits that the Examiner failed to establish a *prima facie* case of obviousness, and to the extent that the Examiner may have established a *prima facie* case, the preponderance of the evidence supports the nonobviousness and patentability of claim 36 and the dependent claims in the Subject Application.

IV. CONCLUSION

For the reasons discussed above, and in the Appeal Brief filed on June 19, 2009, Appellant respectfully asks the Board to direct the Examiner to: (1) withdraw the obviousness rejections under 35 U.S.C. § 103(a); and (2) issue a Notice of Allowance for all claims pending in the Subject Application.

Respectfully submitted,

30- Nov - 2009
Date

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